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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/030,368	10/25/2001	Kaoru Fujimoto	52433/664	8712
26646	7590	05/11/2006	EXAMINER	
KENYON & KENYON LLP ONE BROADWAY NEW YORK, NY 10004			PRICE, ELVIS O	
			ART UNIT	PAPER NUMBER

1621

DATE MAILED: 05/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/030,368	FUJIMOTO ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Elvis O. Price	1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_\_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 03 February 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 40,41,43,44 and 46-49 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 40,41,43,44 and 46-49 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. Claims 40, 41, 43, 44 and 46-49 are pending in the application.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 41, 44, 46, 49 are rejected under 35 U.S.C. 102(b) as being anticipated by Tierney et al. {US Pat. 5,384,335}.

Tierney et al. disclose a process for producing methanol comprising reacting carbon monoxide with an alcohol in the presence of an alkali or alkaline metal-type catalyst other than an alkali metal alkoxide to produce a formic ester, which is hydrogenated in the presence of a hydrogenolysis catalyst to thereby obtain methanol (See Examples 3, 7 and 10-13).

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 40, 43, 47 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tierney et al. {US Pat. 5,384,335}, in view of Elliot et al. {US Pat. 4,939,292}.

Tierney et al. teach a process for producing methanol comprising reacting a primary alcohol with carbon monoxide in the presence of an alkali or alkaline metal-type catalyst, other than an alkali metal alkoxide, and a copper catalyst to produce methanol (see Examples 3, 7 and 10-13). Tierney et al. do not exemplify separating the produced formic ester followed by hydrogenating the said formic ester to obtain methanol. However, Tierney et al. expressly teach that the formic ester that is produced from the two-step synthesis of methanol is advantageously separated and hydrogenated in the presence of a hydrogenolysis catalyst and hydrogen to obtain methanol (see Col. 3, lines 27-68). Additionally, another difference between what is presently claimed and what the Tierney et al. reference teaches is that Tierney et al. do not teach using a catalyst, which contains manganese and/or rhenium in addition to copper.

However, Elliot et al. teach the synthesis of esters (such as a formic esters) by reacting alcohols (such as primary alcohols) and carbon monoxide in the presence of a catalyst containing copper simultaneously with rhenium (see Example IV).

Therefore, it would have been obvious to one having ordinary skill in the art, in view of the Tierney et al. and Elliot et al. references, to produce methanol as presently

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claimed by carrying out a two-step methanol synthesis process, as suggested by Tierney et al., wherein the formic ester is separated and subsequently hydrogenated and wherein the copper chromite catalyst used is replaced by the copper/rhenium catalyst taught by Elliot et al.

One having ordinary skill in the art, desiring to arrive at other art recognizable means of producing methanol, would have been motivated to make such a modification because Tierney et al. expressly teach that the two-step methanol synthesis process is an efficient process that has several advantages over the direct methanol synthesis process, including: lower reaction temperatures, higher synthesis gas conversions per pass, less energy intensive, etc. (see Col. 3, lines 60-68). Additionally, the skilled artisan would have been motivated to use the copper/rhenium catalyst, taught by Elliot et al., in place of the copper chromite catalyst, taught by Tierney et al., because the catalyst taught by Elliot et al. (especially copper mixed with rhenium) are recognized as being effective and preferable for obtaining high yields of formic esters. Therefore, the presently claimed invention would have been obvious to one having ordinary skill in the art.

### ***Response to Arguments***

Applicants' arguments filed 2/3/06 have been fully considered but they are not persuasive.

Applicants have presented a number of arguments but only a few are germane arguments. The Examiner will only address the germane arguments.

Applicants argue that, in Example 3 of Tierney et al., it is doubtful that the catalysts used by Tierney et al. in Example 3 have the same effect and it is likely that the alkali metal-type catalyst were not adequately prepared, and were decomposed.

This argument is not convincing because the Examiner finds no basis for such an argument. Applicants are generally claiming, inter-alia, a process for producing methanol using an alkali metal-type catalyst other than an alkali metal alkoxide, and/or an alkaline earth metal-type catalyst. Tierney et al. expressly teaches the same material process for producing methanol comprising using an alkali metal-type catalyst other than an alkali metal alkoxide, or an alkaline earth metal-type catalyst. In Examples 3, 7 and 10- 13 of Tierney et al., formates, oxides, chromates, carbonates and bicarbonates of sodium, potassium, barium, rubidium and cesium were used as alkali metal-type and alkaline earth metal-type catalysts.

Applicants argue that Elliott et al. does not remedy the difference of what was not taught nor suggested by Tierney et al. because the invention taught by Elliott et al. relates only to the first reaction step of the two step process presently claimed and also the catalyst in Elliott et al. includes zinc whereas the catalyst system of the present invention does not include zinc.

This argument is not persuasive because the Elliott et al. reference was applied only to demonstrate that the catalyst system used in the first reaction step of the presently claimed invention was also used by Elliott et al. in carrying out the same reaction step. Even though the catalyst system taught by Elliott et al. contains zinc, it still reads on applicants claimed catalyst system since applicants' presently claimed

catalyst system does not exclude other components, but only requires copper with manganese and/or rhenium.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elvis O. Price whose telephone number is 571 272-0644. The examiner can normally be reached on 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann R. Richter can be reached on 571 272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Elvis O. Price